

research paper series

Globalisation and Labour Markets



Research Paper 2009/20

Emigration, Wage Inequality and Vanishing Sectors

by

Sugata Marjit and Saibal Kar

The Authors

Sugata Marjit is the Director and Reserve Bank of India Professor of Economics at the Centre for Studies in Social Sciences, Calcutta, India, an External Research Fellow at GEP, and a visiting professors at the Hong Kong Polytechnic University. Saibal Kar is a Fellow in Economics (Associate Professor) at the Centre for Studies in Social Sciences, Calcutta, India.

Emigration, Wage Inequality and Vanishing Sectors

by

Sugata Marjit and Saibal Kar

Abstract

Emigration leads to finite changes in structure of production and sectors vanish because they cannot pay higher wages. Does emigration of one type of labour hurt the other non-emigrating type in this set up? We demonstrate various scenarios when real income of the emigrating and the non-emigrating type do not move together and in the process generalize some of the existing results in the literature. In particular emigration can lead to a drastic change in the degree of inequality depending on which sectors survive in the post-emigration scenario.

JEL Classifications: D50, F2, J61,

Keywords: Skill, emigration, wages, inequality, reallocation

Outline

1. *Introduction*
2. *Model and Equilibrium*
3. *Post-Emigration Production Structure*
4. *Conclusions*

Non-Technical Summary

There has been a recent surge in efforts at analyzing the impact of factor mobility on factor price inequality in source and destination countries. Several important contributions within the last few years developed theoretical and empirical models to explain how wage inequality, primarily, has behaved following increased international mobility of skilled and unskilled labour. Although there is consensus that skilled wage has risen more than the unskilled wage in both developed and developing countries, not surprisingly the analyses have taken various routes. The interface between international factor mobility and factor price changes in the source country attains critical significance particularly in view of emerging policy challenges in a global context.

The present theoretical paper not only envelops much of these results but adds another dimension, namely the post-emigration production pattern in the source country. By invoking a third sector that uses both skilled and unskilled labour we account for a large number of cases where vanishing sectors and wage inequality are joint outcomes of labour migration. This treatment is closer to reality and offers sharp contrast with most of the previous writings where sectors have only one specific skill as a factor of production, and is primarily identified by that category. We establish that the direction of wage inequality – whether pro-skilled or anti-skilled crucially hinges on the income share of capital in the ‘mixed’ sector in comparison to that in one of the ‘surviving’ sectors. By ‘surviving’ sectors we call to attention the possibility of ‘not small’ finite changes as discussed in relation to technical progress in a recent paper by Ronald Findlay and Ronald Jones. It applies here with respect to production organization in the source country. With everything else remaining unperturbed, emigration of skilled workers increases the skilled wage rate in the source country. A rise in skilled wage up to the developed country level might lead to flight of capital towards other sectors in the economy. Consequently, the unit cost of production in the skill specific sector may become larger than the unit price under perfectly competitive conditions and a finite change in the nature of ‘vanishing’ skilled sector is obvious. This also opens up a starker possibility where each sector using a specific factor might vanish. Consequences of emigration on income distribution have naturally been the focal point in the entire analysis and we traced such movements on to the other effects as briefly pointed out in the previous lines. In the context of labour migration from developing countries, the possibility of finite changes in production has not been dealt with previously.

1. Introduction

In recent years a body of literature has emerged analyzing the impact of international labor mobility on wage distribution in the source country. In particular, this literature addresses the question how emigration of skilled and unskilled labor from low wage to high wage countries affects the degree of wage inequality in the low wage country. Marjit and Kar (2005) provide a simple model and derive an intuitively appealing condition under which wage distribution may go against the residual workers of the emigrating group. Using a specific factor model, this study shows that regardless of the emigrating category – skilled or unskilled – return to capital declines following emigration and subsequently raises the return for workers of the non-emigrating type.

Indeed, in some cases residual members of the non-emigrating factor may benefit more than the emigrating group affecting wage inequality in an unexpected manner. Thus, emigration of either skill type may unambiguously improve the relative wage of the non-emigrating workers. Following Marjit and Kar (2005) several papers have extended this emigration-wage inequality link and provided valuable insights.¹ For example, Oladi and Beladi (2007) introduce non-traded goods in connection with emigration of skilled and unskilled workers from a small open economy and evaluate its impact on both source and host countries. In particular, they show that immigration of both skilled and unskilled labor decreases skilled and unskilled real wages in the recipient country with wage gap widened (reduced) due to unskilled (skilled) immigration, if the non-traded sector is less capital intensive than the import competing sector. Individual wage implications are reversed for the source country with respect to both migrating types, but subject to the intensity assumption only one type would exacerbate the extent of inequality. In a related context, Beladi, Chaudhuri and Yabuuchi (2008) introduce unemployment of unskilled workers in a developing country and derive conditions under which inflow of skilled and unskilled workers may reduce wage inequality. However, it is not consistent with true migration patterns where net outflow of either type is positive and large for developing countries. Except for refugee movements (primarily unskilled) and MNC or intergovernmental movements (mainly skilled) it is unlikely

¹ Earlier Mahmood (1991) looked at wage inequality as a consequence of emigration from developing countries. However, it also included a non-traded sector and the focus was predominantly on assessing the role of income distribution across other factors of production such that international competitiveness of the import competing sector in Pakistan is retained.

that such inflow is positive and would have much of an impact on wage gaps in poor countries. Empirically speaking, it has been recently shown in Mishra (2007) that emigration from Mexico to US over two census periods 1970 and 2000 display strong positive impact on Mexican wages along with rising wage inequality.

On a related context, Anwar (2006) utilizes the role played by external economies of scale, particularly in the service sector in middle income and newly industrialized countries, and provides a much more convincing analysis of the unambiguous increase in wage inequality. The paper shows that emigration of unskilled labor must increase wage inequality if the income share of capital in the industrial sector is larger than the service sector and a condition involving output elasticity of factors of production and cost elasticity of factor prices, is positive. Using a similar framework, Anwar (2009) further shows that downsizing increases the varieties produced by the service sector and that in turn raises skilled wage leaving unskilled wage unchanged.² Furthermore, in case of developed countries Oda and Stapp (2009) show that simultaneous inflow of skilled and unskilled labor and capital can cause wage inequality in favor of the skilled.

These and various other issues that wage inequality spawned by factor mobility discussed so far necessitate a synthetic analysis. We therefore offer a model with greater generality within which many of these results should hold. In addition, we demonstrate that factor mobility can be critically responsible for ‘vanishing’ sectors in the source country.

Between two alternative occupations a factor will always choose the one that promises higher rate of return. As factors of production are allowed free entry and exit in a global space the general lesson from trade theory suggests that the set of goods produced in a country may change along with that. In particular, given world prices certain production activities/services might turn out to be unprofitable for certain countries. Such ‘finite’ changes in trade theory do not receive much attention but surely opens up interesting possibilities. Recently, Jones (1996) and Jones and Findlay (2007, Letters) have considered implications of vanishing sectors in a different context. Finite changes typically refer to circumstances when the output contraction is fairly drastic. Jones and Marjit (1992) provide an interesting perspective in a many factor many commodity world. In specific factor models (Jones, 1971) no sector can completely vanish because of the necessity of employing the specific factor. Of course, they do not

² For implications of immigration on welfare in an identical set up see, Anwar (2008).

consider the possibility that such specific factor is internationally mobile.

In a standard Heckscher-Ohlin framework with two factors, however, a vanishing sector is clearly feasible under complete specialization.

This paper considers a 3 X 3 model where two sectors produce X and Y by using skilled and unskilled labor as specific factors and capital as the mobile factor as in Marjit and Kar (2005). There is a third sector that produces Z by using both types of labor and capital. Sectors X and Y may be identified as purely skilled and unskilled sector respectively, owing to proportionately greater use of the specific factors, while Z is the common good. Existence of the third sector allows participation of both types of labor in one activity and thus captures a more realistic scenario by broadening the spectrum of analysis. In the Marjit and Kar (2005) specific-factor type framework emigration of either type of labor must improve the real wage of both while the owners of capital suffer, such that wage inequality or wage distribution is the key focus.

Introduction of the third sector, as in this model, opens up several other possibilities unaccounted for thus far. Interestingly, emigration in this structure may lead to closure of one of the sectors and reduce the 3 X 3 structure to a 2 X 3 system where only two commodities/services are produced henceforth with one specific and one non-specific factor remaining functional within the country. For example, emigration of skilled workers may shut down sector X completely not only because such workers become *too costly* to hire but also because capital flight to Z replaces skilled workers there as well. We establish conditions under which this lowers the unskilled wage, an outcome never to be encountered in structures without a *mixed* sector. Two possibilities are worth mentioning under such circumstances. One, this might perpetuate the flight of skilled workers. Two, it exacerbates wage inequality as consistent with empirical observations in developing countries. The same story can be repeated in case of emigration of unskilled workers with the endogenous production structure being instrumental in driving the distributional consequences in both cases.

The second section describes the model and pre-emigration and post-emigration equilibria. The third discusses the emergence of alternative production structures and their implications for wages and wage inequality. The last section offers concluding remarks.

2. Model and Equilibrium

To start with we have a 3 X 3 model for a small open economy trading only in goods. X uses skilled labor and capital while Y uses unskilled labor and capital. Z uses both skilled and unskilled labor and capital. Technology is neo-classical with diminishing marginal productivity and CRS, markets are competitive and resources are fully employed. Following equations describe the model and use conventional symbols.

$$w_S a_{SX} + r a_{KX} = P_X \quad (1)$$

$$w a_{LY} + r a_{KY} = P_Y \quad (2)$$

$$w_S a_{SZ} + w a_{LZ} + r a_{KZ} = P_Z \quad (3)$$

$$a_{SX} X + a_{SZ} Z = S \quad (4)$$

$$a_{LY} Y + a_{LZ} Z = L \quad (5)$$

$$a_{KX} X + a_{KY} Y + a_{KZ} Z = K \quad (6)$$

Six equations above determine w_S, r, w, X, Y and Z ; where $a_{ij} = a_{ij}(w_{ij} / w_{nj})$; $i \neq n$, given commodity prices P_X, P_Y and P_Z and factor endowments S, L and K .

Now consider a situation where only skilled labor emigrates from the poor source country as domestic wage is lower than that in the richer destination country, $w_S < w_S^*$. Therefore, with sufficient emigration w_S rises up to w_S^* and is held fixed there in post-migration equilibrium. Since the economy is also small in the factor market, this implies one less variable, w_S and one less unit cost – unit price equality condition, namely equation (4) since S is not binding any longer. The new system solves for 5 variables from 5 equations.

However, the new $w_S^* > w_S$ can lead to alternative production structures. We can not rule out zero production for one of the sectors as goods outnumber factors of production under the changed scenario. Therefore any two quantitative price equations can solve for the remaining endogenous factor prices rendering the third competitive price equation redundant. In the redundant equation, if the unit cost (left hand side in any equation 1-3) exceeds the unit price (corresponding right hand side) the commodity becomes unviable under perfect competition and the sector vanishes. Conversely, if the unit cost in that sector becomes lower than the price then one of the factor returns must rise in equilibrium and should suck in that factor from other sectors. This too will jeopardize production in one or both sectors in the

intersection set. Consequently, the exact match between average cost and price for the potentially vanishing sector has a probability of measure zero. Let us now look at the alternative scenarios that can emerge.³

3. Post-Emigration Production Structure

Consider solving r from (1) and (2) given $w_S = w_S^*$ and denote it as,

$$r_1^* = f(w_S^*) \quad (7)$$

Alternatively we can solve for r from (2) and (3) and call it,

$$r_2^* = \phi(w_S^*) \quad (8)$$

First, suppose $r_1^* > r_2^*$; then Z will not be produced. All capital will be absorbed in X and Y . All skilled labor will go in X and all the unskilled in Y . Note that, in the process as $w_S^* > w_S$, r must have fallen and w must have gone up. This is the model Marjit and Kar (2005) have worked with. Here, the non-production in sector Z and subsequent impact of emigration on wage distribution across skill types, is an endogenous outcome and renders the results in Marjit and Kar (2005) a special case within this generalized structure.

Second, consider $r_1^* < r_2^*$ at $w_S = w_S^*$. In this case, all capital will have tendency to flow into the production of Y and Z , such that, all skilled workers who did not migrate will be forced to join sector Z , while the unskilled remain both in Y and Z .

A third, and starker, possibility emerges when only sector Z remains functional and sectors X and Y both vanish. Note that, with X and Y set to zero equation (3) alone can not determine w and r even if $w_S = w_S^*$. Here we need the full-employment conditions to solve for w and r . So, equations (3), (5) and (6) simultaneously solve for w , r and z . We shall refrain from addressing this possibility because our intention is to offer a striking contrast to the already established result that emigration of one type of labor always helps the other non-emigrating type. The second structure shall prove to be sufficient for demonstrating our claim.

Consider the case where emigration of skilled labor leads to closure of sector X , and that Y and Z are the only products. Therefore, to derive the effect of such a change on w and r , we use Jones (1965). The following equations incorporate proportional changes in the

³ Jones and Marjit (1992) discuss such finite changes in production structure in a multi-sector multi-variety trade model and prove a post-trade convergence property. Also see Jones (1996) and Findlay and Jones (2000).

variables denoted by ‘^’. From (2) and (3) using envelope condition, we get,

$$\hat{w}\theta_{LY} + \hat{r}\theta_{KY} = 0 \quad (9)$$

And,
$$\hat{w}\theta_{LZ} + \hat{r}\theta_{KZ} = -\hat{w}_S\theta_{SZ} \quad (10)$$

So,
$$\hat{w} = \frac{\hat{w}_S\theta_{SZ}\theta_{KY}}{\theta_{LY}\theta_{KZ} - \theta_{LZ}\theta_{KY}} \quad (11)$$

Such that,
$$\hat{w} \begin{matrix} > \\ < \end{matrix} 0, \text{ iff } (\theta_{LY}\theta_{KZ} - \theta_{LZ}\theta_{KY}) \begin{matrix} > \\ < \end{matrix} 0 \quad (12)$$

Note that, as $w_S = w_S^*$ in the post migration regime, $\hat{w}_S > 0$, and θ_{ij} 's are income shares of each factor in the j^{th} industry. (12) suggests the usual Stolper-Samuelson conjecture that for w to increase, sector Y must be labor intensive. Viewed differently, emigration of skilled workers imposes a tax on the capital intensive sector. Therefore we can construct the following proposition.

Proposition I: *Emigration of skilled labor must reduce the wage rate of the unskilled workers iff the mixed sector, i.e., sector Z is labor intensive.*

Proof: See above discussion.

Similarly, if unskilled labor alone emigrates and the production structure reduces to sectors X and Z only, the wage implication for the skilled workers is available from the following equation.

$$\hat{w}_S = \frac{\hat{w}\theta_{LZ}\theta_{KX}}{\theta_{SX}\theta_{KZ} - \theta_{SZ}\theta_{KX}} \quad (13)$$

Proposition 2: *Emigration of one type of labor must reduce the wage of the non-*

$$\text{emigrating type iff } \theta_{KZ} < \min\left[\frac{\theta_{SZ}\theta_{KX}}{\theta_{SX}}, \frac{\theta_{LZ}\theta_{KY}}{\theta_{LY}}\right] = \tilde{\theta}_{KZ}$$

Proof: We have already shown that emigration of skilled workers may lower the wage of unskilled workers if sector Z is labor intensive. Proposition (2) makes use of that information along with (13) to demonstrate that emigration of unskilled workers will also lower the return

to skilled workers if and only if, the income share of capital in Z is lower than the minimum of (12) and (13), both of which must be negative for adverse impact on the wage of the non-migrating type. *QED.*

It is obvious that if $\theta_{KZ} < \tilde{\theta}_{KZ}$ and skilled labor emigrates, $\frac{w_s}{w}$ must go up aggravating wage inequality, and conversely if the unskilled emigrates $\frac{w_s}{w}$ must fall reducing wage inequality in the process. It is also to be noted that when w_s goes up and w goes down, r must increase. Interestingly, if both w_s and r go up, then sector X turns unviable as P_X does not change. Therefore, the outcome is consistent with the initial conjecture that the economy might be left with two sectors only; in this case Y and Z . Conversely, if w and r go up and w_s falls, production of Y must stop altogether.

Let us now consider the scenario where the new production structure yields similar results as in Marjit and Kar (2005) to the extent that the wage of the non-emigrant actually goes up. It is clear from (11) that

$$\hat{w} > 0, \text{ iff } \frac{\theta_{KZ}}{\theta_{LZ}} > \frac{\theta_{KY}}{\theta_{LY}} \quad (14)$$

Also,
$$\hat{r} = \frac{-\theta_{LY}\theta_{SZ}}{\theta_{LY}\theta_{KZ} - \theta_{LZ}\theta_{KY}} \hat{w}_s < 0 \quad (15)$$

In this case it is not clear whether Marjit and Kar (2005) type production structure can be ruled out because in both set ups r actually goes down. We claim that if the following conditions hold then the said structure will not be the endogenous outcome.

$$\frac{\theta_{SX}}{\theta_{KX}} > \frac{\theta_{LY}\theta_{SZ}}{\theta_{LY}\theta_{KZ} - \theta_{LZ}\theta_{KY}} \quad (16)$$

(16) suggests that the decline in r if X and Y are produced, is greater than the decline in r when Y and Z are produced.

In other words,
$$\frac{\theta_{SX}}{\theta_{KX}} \frac{\theta_{KY}}{\theta_{LY}} < \frac{\theta_{SZ}\theta_{KY}}{\theta_{LY}\theta_{KZ} - \theta_{LZ}\theta_{KY}} \quad (17)$$

Condition (17) similarly suggests that \hat{w} is greater in magnitude when Y and Z are produced than when X and Y are produced. In fact, (16) and (17) guarantee that even if r goes down production of X can not be sustained in the new equilibrium and the emerging production pattern allows only Y and Z to be produced.

Let us now consider the issue of wage distribution or wage inequality. It is clear that when following emigration of skilled labor the unskilled wage goes down in absolute terms, wage inequality or wage gap must go up. But interestingly, even if \hat{w} goes up (from 12 it means Y , and not Z is labor intensive), it is possible that $\frac{w_s}{w}$ rises.

$$\text{From (11),} \quad \hat{w} = \hat{w}_s \frac{\theta_{SZ} \theta_{KY}}{|\theta|} \quad (11)'$$

where, $|\theta| = (\theta_{LY} \theta_{KZ} - \theta_{LZ} \theta_{KY})$, and using (11)',

$$(\hat{w}_s - \hat{w}) = \frac{|\theta| - \theta_{SZ} \theta_{KY}}{|\theta|} \quad (18)$$

When $|\theta| = (\theta_{LY} \theta_{KZ} - \theta_{LZ} \theta_{KY}) < 0$, it implies, $\hat{w} < 0$ and $(\hat{w}_s - \hat{w}) > 0$, such that wage inequality must increase. However, if sector Y is labor intensive, then $|\theta| > 0$, and

$$\begin{aligned} |\theta| - \theta_{SZ} \theta_{KY} &= \theta_{LY} \theta_{KZ} - \theta_{KY} (\theta_{LZ} + \theta_{SZ}) = \theta_{LY} \theta_{KZ} - \theta_{KY} (1 - \theta_{KZ}) \\ &= \theta_{LY} \theta_{KZ} - \theta_{KY} + \theta_{KY} \theta_{KZ} = \theta_{KZ} (\theta_{LY} + \theta_{KY}) - \theta_{KY} = \theta_{KZ} - \theta_{KY}. \end{aligned} \quad (19)$$

$$\text{Therefore, } (\hat{w}_s - \hat{w}) \begin{cases} > 0, \\ < 0, \end{cases} \text{ iff } (\theta_{KZ} - \theta_{KY}) \begin{cases} > 0, \\ < 0. \end{cases} \quad (20)$$

(20) allows us to offer a definitive condition on wage inequality subject to skill emigration

from the country. From (11) we know that $\hat{w} > 0$, iff $\theta_{KZ} > \tilde{\theta}_{KZ} = \frac{\theta_{LZ} \theta_{KY}}{\theta_{LY}}$. From (20), on

the other hand, (w_s / w) must go up if $\theta_{KZ} > \theta_{KY}$. Comparing the two we offer the following proposition:

Proposition 3: *Emigration of skilled workers improves unskilled wage rate but the wage gap increases iff $\theta_{KZ} > \max[\frac{\theta_{LZ}\theta_{KY}}{\theta_{LY}}, \theta_{KY}]$.*

Proof: See discussion above.

In Marjit and Kar (2005) the only condition that was needed for the wage gap to increase was $\theta_{KY} < \theta_{KX}$. Since X ceases to be produced in the new structure a low value of θ_{KY} relative to θ_{KZ} is necessary for wage gap to increase.

As referred to earlier, Anwar (2006) uses a model with scale economies and variety of intermediate goods to argue that even if capital's income share is the same across sectors, emigration may still increase or decrease the wage gap. This has reference to Marjit and Kar (2005) results that for $\theta_{KX} = \theta_{KY}$, (w_s / w) does not change.

Note that, in the extended framework discussed here, (w_s / w) may go up or down independent of whether $\theta_{KX} = \theta_{KY}$ because production of X is no longer relevant in a structure where only Y and Z are produced.

The relevant condition now is given in terms of θ_{KY} and θ_{KZ} , and it directly follows from (20) that if $\theta_{KY} = \theta_{KZ}$, $\hat{w} > 0$, but $(\hat{w}_s - \hat{w}) = 0$.

Another possible scenario is where only X and Z are produced. Note that, for this to happen w must rise. If X continues to be produced then r must fall. If Y ceases to be produced a decline in r must be compensated by a rise in w so that average cost of producing Y exceeds P_Y .

If X and Y have to be produced then following must be true:

$$\hat{w} = \frac{\theta_{KY}\theta_{SX}}{\theta_{LY}\theta_{KX}} \hat{w}_s \quad (21)$$

If instead, X and Z are produced then,

$$\hat{w} = [\theta_{KZ} \frac{\theta_{SX}}{\theta_{KX}} \hat{w}_s - \theta_{SZ} \hat{w}_s] \frac{1}{\theta_{LZ}}$$

Or,

$$\hat{w} = [\theta_{KZ} \frac{\theta_{SX}}{\theta_{KX}} - \theta_{SZ}] \frac{\hat{w}_s}{\theta_{LZ}} \quad (22)$$

Therefore, if (X, Z) instead of (X, Y) have to be produced then the following must hold:

$$\left[\theta_{KZ} \frac{\theta_{SX}}{\theta_{KX}} - \theta_{SZ} \right] \frac{1}{\theta_{LZ}} > \frac{\theta_{KY}}{\theta_{LY}} \frac{\theta_{SX}}{\theta_{KX}}$$

Or,
$$\frac{\theta_{SX}}{\theta_{KX}} \left(\theta_{KZ} - \frac{\theta_{KY}}{\theta_{LY}} \right) > \frac{\theta_{SZ}}{\theta_{LZ}} \quad (23)$$

(23) implies that similarly as in Marjit and Kar (2005), emigration of skilled workers leads to an increase in the wage rate of the unskilled if any of these combinations are produced and the corresponding conditions satisfied.

4. Conclusions

There has been a recent surge in efforts at analyzing the impact of factor mobility on factor price inequality in source and destination countries. Several important contributions within the last few years developed theoretical and empirical models to explain how wage inequality, primarily, has behaved following increased international mobility of skilled and unskilled labor. Although there is consensus that skilled wage has risen more than the unskilled wage in both developed and developing countries, not surprisingly the analyses have taken various routes. .

The present contribution not only envelops much of these results but adds another dimension, namely the post-emigration production pattern in the source country. By invoking a third sector that uses both skilled and unskilled labor we account for a large number of cases where vanishing sectors and wage inequality are joint outcomes of labor migration. This treatment is closer to reality and in sharp contrast with most of the previous writings where sector specificity of skill types dominates. We establish that the direction of wage inequality – whether pro-skilled or anti-skilled crucially hinges on the income share of capital in the mixed sector in comparison to that in one of the surviving sectors. Possibility of ‘not small’ finite changes as discussed in relation to technical progress in Findlay and Jones (2000) applies here with respect to production organization in the source country. *Ceteris paribus* emigration of skilled workers increases the skilled wage rate in the source country. A rise in skilled wage up to the developed country level might lead to flight of capital towards other sectors in the economy. Consequently, the unit cost of production in the skill specific sector may become

larger than the unit price under perfectly competitive conditions and a finite change in the nature of ‘vanishing’ skilled sector is obvious. This also opens up a starker possibility where each sector using a specific factor might vanish.

The effects of emigration on wage inequality offer another set of results where skilled wage and unskilled wage may no longer move in the same direction and may no longer be considered as snapshots of case-sensitive explanations. In fact, if the mixed sector is relatively more unskilled labor intensive vis-à-vis the unskilled labor specific sector, unskilled wage falls in absolute terms and wage inequality rises. However, if absolute reduction in unskilled wage is ruled out by non-fulfillment of this intensity assumption, even then wage inequality must go up. In other words, vanishing sectors and increasing wage inequality are both robust when it comes to intensity assumptions, unlike some of the previous explanations for rising wage inequality. In brief, therefore, the present contribution not only provides a generalized account of earlier results but opens up possibilities of exploring the effects of factor mobility beyond wage inequality alone.

Another important avenue that one can explore is the growth implication of emigration. If emigration has a negative impact on return to capital, it may have an adverse impact on growth. But a positive impact is what we have tried to highlight in this paper. It seems that there is some potential in progressing along this line.

References

Anwar, S. (2006), Factor mobility and wage inequality in the presence of specialization based external economies, *Economics Letters*, 93, 1, 88–93.

Anwar, S. (2008), Factor mobility, wage inequality and welfare, *International Review of Economics and Finance*, 17, 495–506.

Anwar, S. (2009), Wage inequality, welfare and downsizing, *Economics Letters*, 103, 75–77.

Beladi, H., S. Chaudhuri, and S. Yabuuchi (2008), Can International Factor Mobility Reduce Wage Inequality in a Dual Economy? *Review of International Economics*, 16, 5, 893–903.

Findlay, Ronald and Ronald Jones (2000), Factor bias and technical progress, *Economics Letters*, 68, 303–308.

Jones, R.W. (1996), International trade, real wages and technical progress: the specific factors model, *International Review of Economics and Finance*, 5, 2, 113–124.

Jones, R.W. (1965), The structure of simple general equilibrium models, *Journal of Political Economy*, 73, 557–572.

Jones, Ronald (1971), A three-factor model in theory, trade and history. In: Bhagwati, J., et al. (Eds.), *Trade, Balance of Payments and Growth*. North-Holland, Amsterdam, pp. 3–21.

Jones, R. W. (1974), The Small Country in a Many-Commodity World Duality in International Trade: a Geometrical Note, *Australian Economic Papers*, 13, 225–236.

Jones, Ronald W. and Sugata Marjit (1992), International trade theory and endogenous production structures, in: *Neuefeind, W., Riezman, R. (Eds.), Economic Theory and International Trade-Essays in Honor of T. Rader*, Berlin, Heidelberg: Springer Verlag.

Mahmood, Zafar (1991), Emigration and wages in an open economy: some evidence from Pakistan, *Pakistan Development Review*, 30, 3, 243-62.

Marjit, Sugata and Saibal Kar (2005), Emigration and wage inequality, *Economics Letters*, 88, 141–145.

Mishra, Prachi (2007), Emigration and Wages in Source Countries: Evidence from Mexico, *Journal of Development Economics*, 82, 180-199.

Oda, Masao and Robert Stapp (2009), Factor Mobility and Wage Inequality, in T. Kamihigashi and L. Zhao (eds.) *International Trade and Economic Dynamics – Essays in Memory of Koji Shimomura*. Berlin Heidelberg: Springer-Verlag.

Oladi, Reza and Hamid Beladi (2007), International Migration and Real Wages, *Economics Bulletin*, 6, 30, 1-8.